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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/519,339

08/15/2005

Michinari Miyagawa

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EXAMINER

NGUYEN, KHANH TUAN

ART UNIT

PAPER NUMBER

1751

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
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3 MONTHS

04/10/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/10/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/519,339	Applicant(s) MIYAGAWA ET AL.	
	Examiner Khanh T. Nguyen	Art Unit 1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 9-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The preliminary amendment filed on 12/22/2004 is entered and acknowledged by the Examiner. Claims 1-23 are currently pending in the instant application.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 12/22/2004 and 12/07/2006 has been regarded by Examiner and made of record in the application file.

Drawings

4. The drawings were received on 12/22/2004. These drawings are acceptable and made of record in the application file.

Election/Restrictions

5. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

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In accordance with the 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

- I. Claim(s) 1-8, drawn to a conductive resin film requiring a specific volume resistance.
- II. Claim(s) 9-14, drawn to a conductive resin film having carbon fibers with specific diameter and lengths.
- III. Claim(s) 15-23, drawn to a collector.

6. The inventions listed as I, II and III do not relate to a single general invention concept under PCT Rule 13.1 because, under the PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group II does not require the two layers to have a particular volume resistance ratio as Group I. A collector as in Group III can be made with materials differently than Group I and Group II.

7. During a telephone conversation with Katsuhiro Arai on March 21, 2007 a provisional election was made without traverse to prosecute the invention of conductive resin film, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kanno et al. (U.S Pat. 5,458,967 hereinafter, "Kanno").

Regarding claim 1, Kanno discloses a composition sheet for electromagnetic wave shield comprising aluminum foil conductive substrate laminated with a conductive hot melt resin layer (Col. 1, lines 57-65). The prior art also discloses the low-resistance hot melt resin layer in example 1 having a volume resistivity of 0.2 ohm-cm (Col. 3, line 65) and a volume resistivity of 0.8 ohm-cm in comparative example 2 (Col. 4, line 34). The volume resistivity of Kanno hot melt resin layer is within the claimed volume resistance range of 0.1 to 1.0 ohm-cm. The reference specifically or inherently meets each of the claimed limitations. The reference is anticipatory.

In the alternative that the above disclosure is insufficient to anticipate the above listed claims, it would have nonetheless been obvious to the skilled artisan to produce the claimed composition, as the reference teaches each of the claimed ingredients for the same utility.

Regarding claim 2, Kanno does disclose the hot melt resins layer (i.e., low-resistance layer) is made from ethylene vinyl acetate (EVA) copolymer resin, which is a thermoplastic resin, and further comprises of carbon fibers with the fiber diameters of not more than 1.0 micrometer and the lengths of not more than 50 micrometers (Col. 1, lines 66-67 and Col. 2, lines 1-9). The prior art also discloses the thickness of the hot melt resins layer is 30 micrometer which is within the instant claimed thickness of 1 to 50 micrometers (Col. 4, lines 13-18) and having a volume resistivity of 0.2 ohm-cm (Col. 3, line 65). Furthermore, aluminum foil volume resistance have been known in the art to be 10^6 ohm-cm.

It is within the expected skills of one having ordinary skill in the art to conclude that the volume resistance of low-resistance hot melt layer, as taught by Kanno, in a thickness direction is 1/5 or less of a volume resistance of the aluminum foil substrate in a thickness direction.

Regarding claim 3, Kanno further discloses the hot melt resins layer (i.e., low-resistance layer) is made from ethylene vinyl acetate (EVA) copolymer resin, which is a thermoplastic resin, and further comprises of carbon fibers with the fiber diameters of

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not more than 1.0 micrometer and the lengths of not more than 50 micrometers (Col. 1, lines 66-67 and Col. 2, lines 1-9). The prior art disclosure of the conductive carbon fiber diameters and lengths read on the instant claimed of a conductive agent having 0.003 to 0.5 micrometer and a fiber length of 0.1 to 100 micrometer.

Regarding claim 4, Kanno further discloses the thickness of the hot melt resins layer (i.e., low-resistance layer) is 30 micrometers, which is within the instant claimed thickness of 1 to 50 micrometers (Col. 4, lines 13-18).

Regarding claim 5, Kanno further discloses the composition sheet of the electromagnetic wave shield wherein the substrate layer is metal foil or more specifically aluminum foil layer (Col. 1, lines 60 and 64). The reference disclosure of metal or aluminum foil layer read on the instant claimed of a substrate comprises a conductive agent selected from the group consisting of graphite powder, exfoliated graphite, carbon black, carbon fiber, carbon nanofiber, carbon nanotube, a metal carbide, a metal nitride, a metal oxide, metal fiber and metal powder.

Regarding claim 6, Kanno further discloses a process for manufacturing a composition sheet of the electromagnetic wave shield by a method to coat the resin solved (i.e., thermoplastic resin and carbon fiber mixture) in a solvent on the metal foil, or, by a method to carry out the contact bonding or the fusing after the resin is formed in as sheet and the sheet is set on the metal foil surface. The lamination of the resin is

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preferably effected on the entire plan or on a part of one side of the metal foil (Col. 1, lines 55-67, Col. 2, lines 1-2, Example 1 and Example 2).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanno et al. (U.S Pat. 5,458,967) as applied to the above claims, and further in view of Takeru et al. (US Pat. 6,641,933 hereinafter, "Takeru").

Kanno is relied upon as set forth above. With respect to instant claims 7 and 8, Kanno does not disclose a composition sheet used as a collector for an electric double layer capacitor or a collector for an electric double layer capacitor comprising of a composition sheet. However, the techniques to use a conductive resin film (i.e., sheet) comprising a thermoplastic resin and a conductive material as the collector for electrical bi-layer capacitor is known in the technical field.

In the same field of endeavor, Takeru discloses a sheet-like electrode structure where the charge collector of a cell and an electric double layer capacitor were used [0001]. The prior art further discloses a coating film 3 consisting of an ethylene-methacrylic acid copolymer resin [0011] and conductive filler such as carbon fibers

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[0025] and a metal collector main body 2 (i.e., substrate layer) is aluminum foil [0019] coated with the coating film 3 (Abstract).

Therefore, it would have been obvious to one of ordinary skilled in the art to use the conductive sheet, as taught by Kanno in view of Takeru, as a collector for an electrical bi-layer capacitor to improve the cycle characteristic of a secondary battery.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh T. Nguyen whose telephone number is (571) 272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



KTN
Examiner
03/22/2007


Mark Kopec
Primary Examiner